

## PATENT

### We Claim:

1. A foamed polymer fiber composite building material, comprising: about 35-75 wt.% polymeric resin; about 25-65 wt.% fiber, and a specific gravity of less than about 1.25 g/cc, said composite building material including at least 1% porosity by volume of solids resulting from the addition of a gaseous medium or blowing agent to a molten precursor of said composite building material.
2. The wood composite building material of claim 1 further comprising an additive for improving the melt strength of said molten precursor.
3. The composite building material of claim 2 wherein said additive comprises an acrylic modifier.
4. The composite building material of claim 1 wherein said fiber comprises cellulosic fiber.
5. The composite building material of claim 1 wherein said molten precursor comprises about 0.1 to 2 wt.% of a chemical blowing agent and about .1 - 15 wt.% of an acrylic modifier.
6. The composite building material of claim 1 further comprising about 5-40% porosity by volume of solids.

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7. The composite building material of claim 6 wherein said building material has a specific gravity of about .5-1.2 g/cc.
8. The composite building material of claim 1 further comprising an additive for producing a weathered appearance to said building material, said additive selected from the group comprising: a dye, pigment, flyash or a mixture thereof.
9. The composite building material of claim 1 including a flexural modulus of about 100,000 to 450,000 psi
10. A foamed polymer - wood composite, formed from a molten mixture comprising: about 35 - 75 wt.% polymeric PVC resin, about 25 - 65 wt.% wood fiber, and a blowing agent or gaseous medium, said molten mixture forming a polymer - wood composite having a specific gravity of less than about 1.25 g/cc, and a flexural modulus of about 100,000 - 450,000 psi.
11. The composite of claim 10 further comprising an additive for improving the melt strength of said molten mixture during extrusion.
12. The composite of claim 10 wherein said blowing agent comprises about 0.1 - 2.0 wt.% of a chemical blowing agent.
13. The composite of claim 12 wherein said chemical blowing agent is mixed into said polymeric resin and wood fiber during compounding, or at about the feet throat of an extruder.

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14. The composite of claim 10 whereby said blowing agent produces a plurality of pores or cells within said composite for permitting a screw to be fastened flush to a surface of said composite without predrilling.

15. A method of forming a foamed polymer-cellulosic composite building material, comprising:

- (a) compounding about 35 - 75 wt.% polymeric resin, about 25 - 65 wt.% cellulosic fiber, and about 0.1 to 2 wt.% of a blowing agent to form a compounded mixture;
- (b) feeding said compounded mixture into an extruder, whereby said blowing agent becomes decomposed, disbursing a gas into said compounded mixture as it melts; and
- (c) extruding said molten mixture containing said gas through a die whereby said gas forms tiny bubbles which are trapped within said polymer-cellulosic fiber composite.

16. The method of claim 15 wherein said compounded mixture further comprises a high molecular weight acrylic modifier for increasing melt elasticity and strength.

17. The method of claim 15 wherein said die comprises a generally board-shaped cross section.

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18. A foamed polymer wood composite building material having a generally board-shaped cross-section, formed from a molten precursor comprising: about 45-60 wt.% of a polyvinyl-chloride resin, about 35-55 wt.% wood flour, about .1-15 wt.% acrylic modifier; and about .1-2.0 wt.% of a chemical blowing agent; said building material having a specific gravity of less than about 1.25 g/cc and permitting a screw to be fastened flush to a surface of said building material without predrilling; said building material also comprising a flexural modulus of about 100,000-450,000 psi.

19. The composite building material of claim 18 wherein said polyvinyl-chloride resin comprises a compounded resinous mixture.

20. The composite building material of claim 18 wherein said building material comprises a pigment for producing a weathered wood-gray appearance.